

WHAT IS CLAIMED IS:

1. An optical space transmitter comprising:

a light source for emitting a light beam modulated according to a signal to be transmitted;

5        an optical system for sending out the light beam emitted from said light source as transmission light beam with an angle of expansion;

a temperature detector for detecting the internal temperature of the device; and

10        a control means for changing the angle of expansion of said transmission light beam as a function of the temperature detected by said temperature detector.

15        2. An optical space transmitter according to claim 1, wherein

said control means includes an computing circuit for determining by computation an appropriate angle of expansion of the light beam to be transmitted on the basis of the temperature detected by said temperature detector and a drive means for driving at least part of said optical system in the direction of the optical axis according to the outcome of the computation of the computing circuit.

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3. An optical space transmitter according to claim 1, further comprising:

a light receiving means for converting the reception signal transmitted from another device and taken into the own device so as to make the optical axis thereof agree with the optical axis of the light beam to be transmitted into an electric signal.

4. An optical space transmitter according to claim 3, further comprising:

an angle correcting means for correcting the angular displacement between the light beam to be transmitted and the received light beam.

5. An optical space transmitter according to claim 4, wherein

said angle correcting means has a tracking mirror arranged on the optical path of the light beam to be transmitted and the received light beam and an actuator for changing the angle of the tracking mirror.

6. An optical space transmitter according to claim 5, wherein

said optical system includes a beam splitter for separating the received light beam from the light beam to be transmitted and a half mirror for dividing the received light beam separated by the beam splitter into two light beams and said light receiving means includes a first photodetector for receiving one of the two

light beams produced by said half mirror by dividing  
the incoming light beam and detecting it as main signal  
and a second photodetector for receiving the other  
light beam and detecting the angular displacement  
5 between the light beam to be transmitted and the  
received light beam, said actuator being adapted to  
change the angle of the tracking mirror according to  
the output signal of said second photodetector.